

WHAT IS CLAIMED IS:

1. A method of treating tumors or viral infections comprising administering a hybrid molecule having an interferon molecule, or a variant thereof, joined at one end to a first end of an immunoglobulin Fc fragment, without any linker between the interferon and the immunoglobulin Fc fragment.
2. A method of treating tumors or viral infections comprising administering a hybrid molecule having an interferon molecule, or a variant thereof, joined at one end to a first end of an immunoglobulin Fc fragment with a first linker between the interferon and the immunoglobulin Fc fragment.
3. The hybrid molecule of claim 1 wherein the interferon molecule is joined at its C-terminal end to the N-terminal end of an immunoglobulin Fc fragment.
4. The hybrid molecule of claim 2 wherein the interferon molecule is joined at its C-terminal end through the first linker to the N-terminal end of an immunoglobulin Fc fragment.
5. The hybrid molecule of claims 1 wherein another interferon molecule is joined at its end to the end of the other chain of the immunoglobulin Fc fragment, thereby forming a homodimer.
6. The hybrid molecule of claims 2 wherein another interferon molecule is joined at its end through a second linker to the end of the other chain of the immunoglobulin Fc fragment, thereby forming a homodimer.

7. The hybrid molecule of claims 1 or 2 wherein the Fc fragment is a $\gamma 4$ chain Fc fragment.

8. The hybrid molecule of claim 2 wherein the linker comprises Gly-Ser repeat units.

10. The hybrid molecule of claim 9 wherein the linker is between two and 40 amino acids in length.